program code for assigning the second cell to a third input element in the matrix configuration.

REMARKS

This paper is filed in response to the Office Action mailed August 17, 2010 (the "Office Action").

Following the amendments above, claims 1-25 remain pending. Claims 1-11 and 23-25 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,819,312 to Fish ("Fish") in view of U.S. Patent No. 6,084,587 to Tarr et al ("Tarr") and further in view of U.S. Patent No. 6,631,000 to Reinkensmeyer et al ("Reinkensmeyer"). Claims 12-22 were rejected under 35 U.S.C. § 103(a) to U.S. Patent No. 6,954,899 to Anderson ("Anderson") in view of U.S. Patent No. 7,081,883 to Chen ("Chen").

Applicant has amended claims 1 and 23. No new matter is added by this amendment and support may be found in the specification and claims as originally filed.

Applicant traverses each of the Examiner's rejections and respectfully requests reconsideration and allowance of all claims in view of the remarks below.

I. § 103(a) – Claims 1-11 and 23-25 – Fish in view of Tarr and Reinkensmeyer

Applicant respectfully traverses the rejection of claims 1-11 and 23-25 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Fish in view of Tarr and Reinkensmeyer.

To establish *prima facie* obviousness of a claimed invention under 35 U.S.C. § 103, the Office Action must show, either from the references themselves or in the knowledge generally available to one of ordinary skill in the art, that the cited references disclose or suggest each claimed element.[1]

Claims 1-11 and 23-25 are patentable over Fish in view of Tarr and Reinkensmeyer because the combined references do not disclose or suggest "a plurality of graphical input elements arranged in a matrix configuration." In addition, the combined references do not

[1] See Graham v. John Deere Co., 383 U.S. 1 (1966); See also KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398 (2007).

disclose or suggest "defining a first cell, the first cell comprising a first parameter representing a first haptic effect." Finally, the combined references do not disclose or suggest "assigning the first cell to a first graphical input element in the matrix configuration; [and] assigning the first cell to a second graphical input element in the matrix configuration."

In the Office Action, the Examiner argues that the haptel devices disclosed by Fish correspond to a plurality of graphical input elements and that since Fish shows that haptels can be arranged in a grid-like formation, Fish discloses a plurality of graphical input elements arranged in a matrix configuration. However, the haptels are not graphical input elements; in fact, the haptels are not graphical at all – they are physical devices – while the graphical input elements of claim 1 are displayed on a display device. Thus, Fish does not disclose "a plurality of graphical input elements arranged in a matrix configuration." Neither Tarr nor Reinkensmeyer cures this deficiency as the Examiner has not pointed to any portion of either of these references that discloses "a plurality of graphical input elements arranged in a matrix configuration." Thus, the Examiner has failed to state a *prima facie* case of obviousness under 35 U.S.C. § 103(a).

Further, the Examiner alleges that Fish discloses "defining a first cell, the first cell comprising a first parameter representing a first haptic effect" because more than one haptel can be grouped together to output haptic feedback.[2] However, the present specification states that "[a]s used herein, a cell refers to a memory construct in which parameters represent or define haptic effects." In contrast, the Examiner alleges that more than one haptel can be grouped together to output haptic feedback.[3] However, Fish does not disclose that one or more haptels grouped together defines a "memory construct in which parameters represent or define haptic effects." As noted previously, a haptel is a physical, mechanical device and is not a memory construct. Thus, a group of haptels is likewise not a memory construct. Thus, Fish does not disclose or suggest "defining a first cell, the first cell comprising a first parameter representing a first haptic effect." Neither Tarr nor Reinkensmeyer cures this deficiency as the Examiner has not identified any portion of Tarr or Reinkensmeyer that discloses a cell as claimed. Thus, the Examiner has failed to state a *prima facie* case of obviousness under 35 U.S.C. § 103(a).

[2] Office Action at 8.
[3] Id.

Finally, the Examiner alleges that Fish discloses "assigning the first cell to a first graphical input element in the matrix configuration; [and] assigning the first cell to a second graphical input element in the matrix configuration." However, as noted previously, Fish does not disclose either a "cell" or a "graphical input element" and therefore cannot disclose "assigning the first cell to a first graphical input element in the matrix configuration; [and] assigning the first cell to a second graphical input element in the matrix configuration." Further, the Examiner has not identified any portion of Tarr or Reinkensmeyer as disclosing either a cell or a plurality of graphical input elements arranged in a matrix configuration. Thus, the Examiner has failed to state a *prima facie* case of obviousness under 35 U.S.C. § 103(a).

For at least the foregoing reasons, the Office Action fails to state a *prima facie* case of obviousness under 35 U.S.C. § 103(a) for claim 1 over Fish in view of Tarr and Reinkensmeyer. Therefore, claim 1 is patentable over the combined references. Applicant respectfully requests the Examiner withdraw the rejection of claim 1.

Like claim 1, claim 23 recites "a plurality of graphical input elements arranged in a matrix configuration," "defining a first cell, the first cell comprising a first parameter representing a first haptic effect," and "assigning the first cell to a first graphical input element in the matrix configuration; [] [and] assigning the first cell to a second graphical input element in the matrix configuration." Therefore, claim 23 is patentable over the combined references for at least the same reasons as claim 1. Applicant respectfully requests the Examiner withdraw the rejection of claim 23.

Because claims 2-11, 24 and 25 each depend from and further limit one of claims 1 or 23, each of claims 2-11, 24, and 25 is patentable over the combined references for at least the same reasons. Applicant respectfully requests the Examiner withdraw the rejection of claims 2-11, 24, and 25.

II. § 103(a) – Claims 12-22 – Anderson in view of Chen

Applicant respectfully traverses the rejection of claims 12-22 under 35 U.S.C. § 103(1) as allegedly being unpatentable over Anderson in view of Chen.

Anderson in view of Chen does not disclose or suggest "channels" nor that "the plurality of detents [is] configured to substantially constrain movement of an interface device to one of the

first primary channel, the second primary channel, the first secondary channel, or the second secondary channel, wherein: each channel is a substantially one-dimensional channel, the first primary channel intersects the second primary channel, the first secondary channel intersects one of the first or second primary channel, and the second secondary channel intersects one of the first or second primary channels or the first secondary channel" as recited in claim 16.

Neither Anderson nor Chen disclose "channels." Anderson discloses control areas having haptic boundaries. The examiner points to the haptic boundaries of Anderson as being the claimed detents.[4] However, the Examiner simply states that the channels are the X and Y degrees of freedom as bounded by the edges of a bounding box, such as that shown in Figure 3b and 3c of Anderson. However, such a bounding box does not meet the elements of claim 16. Claim 1 recites, in part:

> "the plurality of detents configured to substantially constrain movement of an interface device to one of the first primary channel, the second primary channel, the first secondary channel, or the second secondary channel, wherein:
>
> each channel is a substantially one-dimensional channel,
>
> the first primary channel intersects the second primary channel,
>
> the first secondary channel intersects one of the first or second primary channel, and
>
> the second secondary channel intersects one of the first or second primary channels or the first secondary channel."

The bounding box or bounding cube of Anderson does not disclose such a configuration. Anderson's bounding cube defines a region in which a cursor may be freely moved in three dimensions (X, Y, and Z) and a haptic effect is felt when the cursor reaches one of the edges of the bound cube. However, such a configuration is distinct from and does not disclose the quoted claim elements. For example, Anderson discloses that movement is unrestricted in all three dimensions until an edge of the bounding cube is reached. In contrast, claim 16 recites that "the plurality of detents ... substantially constrain movement of an interface device to one of the first primary channel, the second primary channel, the first secondary channel, or the second secondary channel." In other words, for example, if the interface device is moving in the first

[4] During the telephonic interview, the Examiner clarified that "the diagonal control at channel 45 degree of X-axis right direction" as stated in page 3 of the Office Action refers the Z-axis of the bounding cube.

primary channel, it is constrained from moving in other channels. Similarly, if the interface device is moving in the second primary channel, it is constrained from moving in other channels.[5] While the X-dimension is one of three dimensions of the Anderson boundary cube, movement in the X dimension not restricted to movement only in the X-direction – i.e. to one dimension. In other words, within the Anderson bounding cube, a cursor may be moved in the X dimension simultaneously with unrestricted movement in the Y and Z dimensions. Such unrestricted multi-dimensional movement is not contemplated by the language of claim 16.

Thus, Anderson does not disclose "channels" as recited in claim 16. Such a feature is also not disclosed by Chen. Further, as the Examiner states in the Office Action, Anderson does not disclose or suggest "each channel is a substantially one-dimensional channel" or "the first primary channel intersects the second primary channel, the first secondary channel intersects one of the first or second primary channel, and the second secondary channel intersects one of the first or second primary channels or the first secondary channel."[6] However, Chen does not cure any of these deficiencies.

The Office Action alleges that Chen discloses two primary and two secondary channels because, apparently, Chen discloses a device that is moveable by two fingers in two degrees of freedom. However, there are several problems with this assertion. First, Chen does not, in fact, disclose any channels. Secondly, the "channels" that the Examiner alleges are disclosed by Chen are wholly different and incompatible with the "channels" the Office Action identifies in Anderson. Finally, to the extent Chen discloses "channels," the separate indentations for two fingers in the Chen device and their respective movements are not separate channels.

During the telephonic interview, the Examiner explained that because two fingers are used to control the Chen device, each could be considered a separate channel apparently because each finger could individually control an on-screen object (e.g. a cursor) within a separate Anderson bounding box or cube. Thus providing separate channels. This is inconsistent with the definition of channel used during the Examiner's analysis of Chen; however, more importantly, Chen does not disclose that each finger can be used independently to control its own respective on-screen cursor. Rather, the Chen device is very similar in nature to a contentional pointing stick on a laptop. It is disclosed to be an interface device that provides positional

[5] Applicant refers the Examiner to Figure 13 of the present specification for an illustrative example of one such configuration.
[6] Office Action at 3.

information based on displacement of the device from a neutral position – e.g. if a user pushes the device forward, similar to pushing a pointing stick forward, the cursor on the screen moves in a direction on the screen. The device is further disclosed as being biased to a centered, neutral position, such that when user input is halted, it returns to the neutral position. The Chen device also allows for rotational movements; however, it does not disclose that it is capable of independently, simultaneously controlling two different on-screen objects, one for each finger. Rather, the finger depressions in the Chen device provide the ability for the user to move the device translationally, but also rotationally, as well as providing typical mouse-button functions (one for each finger).[7] Thus, the Examiner's allegation that Chen discloses two discrete sets of channels is incorrect. Rather the two finger depressions in the Chen device are provided to allow easier manipulation of the Chen device in its various translational and rotational degrees of freedom.

Further, the Examiner's allegations with respect to what constitutes a channel in Anderson is incompatible with what he alleges are channels in Chen. The Examiner identified the various bounding areas within Anderson as disclosing channels, while in Chen, he identifies the two different finger depressions as providing separate control "channels." However, the different finger depressions of Chen are not restricted to movement in a single dimension or any of the other characteristics of channels in claim 16 (e.g. a plurality of detents defining the channels). Further, these alleged channels in Chen are of a wholly different character than the on-screen virtual bounding areas disclosed in Anderson. Thus, even if the Anderson bounding areas can be construed to be channels, the alleged channels in Chen are not compatible with and cannot be used to provide any missing characteristics of the alleged Anderson channels.

Finally, the Examiner alleged during the interview that the "'channel' is referring to the input output communication interface as demonstrated in Anderson."[8] This concept of a channel is incompatible with the plain language of claim 16, which recites "a … channel defined along a[n] … axis" and "the plurality of detents configured to substantially constrain movement of an interface device to … [one of the] channel[s]." It is illogical to refer to a communications channel as being defined along an axis or using a plurality of detents to constrain movement of an device within the channel. A communications channel does not have an axis and is not

[7] Chen, Figures 6A-B, 7A-B, 11A-B, col. 6, line 14 – col.7, line 18,
[8] Interview Summary (Exhibit A).

defined along an axis. Further, an interface device may use a communications channel, but it is not constrained to move within the communications channel by a plurality of detents. A communications channel is not an area or volume, it is concept referring to a mechanism that allows a flow of information between a transmitter and a receiver and is typically physically embodied in one or more wires or even by radio waves. It does not make sense to state that a device's movement is constrained to move within such a channel by a plurality of detents. Thus, Anderson does not disclose a "channel" as recited in the claims.

Thus, Anderson in view of Chen does not disclose or suggest each and every element of claim 16. Therefore, claim 16 is patentable over Anderson in view of Chen. Applicant respectfully requests the Examiner withdraw the rejection of claim 16.

Because claims 12-15 and 17-22 depend from and further limit claim 16, each of claims 12-15 and 17-22 are patentable over Anderson in view of Chen for at least the same reasons. Applicant respectfully requests the Examiner withdraw the rejection of claims 12-15 and 17-22.

CONCLUSION

Applicant respectfully asserts that in view of the amendments and remarks above, all pending claims are allowable and Applicant respectfully requests the allowance of all claims.

Should the Examiner have any comments, questions, or suggestions of a nature necessary to expedite the prosecution of the application, or to place the case in condition for allowance, the Examiner is courteously requested to telephone the undersigned at the number listed below.

Respectfully submitted,

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